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Miyamoto et al.

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(54) **THREE-DIMENSIONAL IMAGE PROCESSING APPARATUS WITH ENHANCED AUTOMATIC AND USER POINT OF VIEW CONTROL**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 44 days.

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(58) Field of Search **463/32, 33, 30, 463/5, 31, 34-35, 7, 1, 36, 37-39; 345/419, 302**

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(57) **ABSTRACT**

A video game system includes a game cartridge which is pluggably attached to a main console having a main processor, a coprocessor, expandable main memory and player controllers. A multifunctional peripheral processing subsystem external to the game microprocessor and coprocessor is described which executes commands for handling player controller input/output to thereby lessen the processing burden on the graphics processing subsystem. The video game methodology features camera perspective or point of view control features. The system changes the "camera" angle (i.e., the displayed point of view in the three-dimensional world) automatically based upon various conditions and in response to actuation of a plurality of distinct controller keys/buttons/switches, e.g., four "C" buttons in the exemplary embodiment. The control keys allow the user at any time to move in for a close up or pull back for a wide view or pan the camera to the right and left to change the apparent camera angle. Such user initiated camera manipulation permits a player to better judge jumps or determine more precisely where an object is located in relation to the player controlled character.

7 Claims, 35 Drawing Sheets

